

## Loconoz

**(1) Experiment name and brief description;**

*Pulmonary Responses To Exposure To Low Concentration Ozone for 6.6 Hours With Moderate Exercise in Healthy Young Adults.*

A randomized cross-over design study of lung function and inflammation after exposure to low concentration ozone or clean air

**(2) Subject no. (no personal ID requested):**

61 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Ozone

**(4) Dose or dose range during subject exposure;**

Clean Air

Ozone: 0.06ppm or 0.08 ppm for 6.6 hours. No deviation more than 0.01 detected.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results that have undergone QA and peer-reviewed have been reported in:

[Kim CS](#), [Alexis NE](#), [Rappold AG](#), [Kehrl H](#), [Hazucha MJ](#), [Lay JC](#), [Schmitt MT](#), [Case M](#), [Devlin RB](#), [Peden DB](#), [Diaz-Sanchez D](#). Lung function and inflammatory responses in healthy young adults exposed to 0.06 ppm ozone for 6.6 hours [Am J Respir Crit Care Med](#). 2011 May 1;183(9):1215-21

Publically available from:

[http://www.atsjournals.org/doi/full/10.1164/rccm.201011-1813OC#.U\\_OysvldXpk](http://www.atsjournals.org/doi/full/10.1164/rccm.201011-1813OC#.U_OysvldXpk)

Alexis NE, Lay JC, Zhou H, Kim CS, Hernandez ML, Kehrl H, Hazucha MJ, Devlin RB, Diaz-Sanchez D, Peden DB. [The glutathione-S-transferase mu 1 \(GSTM1\) null genotype and increased neutrophil response to low-level ozone \(0.06 ppm\)](#). J Allergy Clin Immunol. 2013 Feb;131(2):610-2

Publically available from:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3509264/>

[McDonnell WF](#), [Stewart PW](#), [Smith MV](#), [Kim CS](#), [Schelegle ES](#). Prediction of lung function response for populations exposed to a wide range of ozone conditions. [Inhal Toxicol](#). 2012 Aug;24(10):619-33

Publically available from:

<http://informahealthcare.com/doi/full/10.3109/08958378.2012.705919>

## OMEGACON

**(1) Experiment name and brief description;**

*Cardioprotective Effects of Omega-3 Fatty Acids Supplementation in Healthy Older Subjects Exposed to Air Pollution Particles*

Randomized trial to determine if dietary supplementation with omega-3 fatty acid (fish oil) can alter the effects of particles on heart rate variability in older individuals.

**(2) Subject no. (no personal ID requested):**

35 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Concentrated Ambient Particles (CAPs)

**(4) Dose or dose range during subject exposure;**

Clean air

CAPS: 78.68 ug/m<sup>3</sup> - 468.96 ug/m<sup>3</sup> for 2 hours. One participant received 750.83 ug/m<sup>3</sup> for 23 minutes.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results that have undergone QA and peer-reviewed have been reported in:

[Tong H](#), [Rappold AG](#), [Diaz-Sanchez D](#), [Steck SE](#), [Berntsen J](#), [Cascio WE](#), [Devlin RB](#), [Samet JM](#).

Omega-3 fatty acid supplementation appears to attenuate particulate air pollution-induced cardiac effects and lipid changes in healthy middle-aged adults. [Environ Health Perspect.](#) 2012 Jul;120(7):952-7

Publically available from:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3404661/>

## CAPTAIN

**(1) Experiment name and brief description;**

*Cardiopulmonary Effects of Exposure of Healthy Older GSTM1 Null and Sufficient Individuals to Concentrated Ambient Air Particles*

Randomized trial; companion to OMEGACON,, to determine if dietary supplementation with olive oil can alter the effects of particles on vascular endpoints in older individuals with different genotypes

**(2) Subject no. (no personal ID requested):**

18 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Concentrated Ambient Particles (CAPs)

**(4) Dose or dose range during subject exposure;**

Clean air

CAPS: 64.71 ug/m3 - 417.75 ug/m3 for 2 hours.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results are currently being analyzed and have not yet undergone QA and peer-review or been reported

## KINGCON

**(1) Experiment name and brief description;**

*Mechanisms by which air pollution particles exacerbate asthma in older adults with mild asthma.*

A randomized cross-over design study. One of two parallel studies to compare cardiopulmonary effects of particles in individuals of different ages. This study is that of older individuals (over 45 years old) with mild asthma.

**(2) Subject no. (no personal ID requested):**

14 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Concentrated Ambient Particles (CAPs)

**(4) Dose or dose range during subject exposure;**

Clean Air

CAPS: 37.77 ug/m<sup>3</sup> - 578.95 ug/m<sup>3</sup> for 2 hours.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results are currently being analyzed and have not yet undergone QA and peer-review or been reported

## Asthmacon

**(1) Experiment name and brief description;**

*Physiological Changes in Mild to Moderate Asthmatics Exposed to Concentrated Chapel Hill Ambient Air Particles*

A randomized cross-over design study. One of two parallel studies to compare cardiopulmonary effects of particles in individuals of different ages. This study is that of younger individuals with mild asthma.

**(2) Subject no. (no personal ID requested):**

18 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Concentrated Ambient Particles (CAPs)

**(4) Dose or dose range during subject exposure;**

Clean Air

CAPS: 24.79 – 180.34 ug/m<sup>3</sup> for 2 hours.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results are currently being analyzed and have not yet undergone QA and peer-review or been reported

## X-CON

**(1) Experiment name and brief description;**

*Physiological Changes in Adults with Metabolic Syndrome Exposed to Concentrated Ultrafine Chapel Hill Air Particles*

A randomized cross-over design study to determine the effect of ultrafine particles on healthy individuals with no overt disease but who have metabolic syndrome.

**(2) Subject no. (no personal ID requested):**

41 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Ultrafine Concentrated Ambient Particles (ultrafine CAPS)

**(4) Dose or dose range during subject exposure;**

Clean Air

Ultrafine CAPS: 6.46 ug/m<sup>3</sup> – 118.07 ug/m<sup>3</sup> for 2 hours.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results that have undergone QA and peer-reviewed have been reported in:

[Ghio AJ](#), [Bassett M](#), [Montilla T](#), [Chung EH](#), [Smith CB](#), [Cascio WE](#), [Carraway MS](#). Case report: supraventricular arrhythmia after exposure to concentrated ambient air pollution particles. [Environ Health Perspect](#). 2012 Feb;120(2):275-7.

Publically available from:

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3279446/>

[Devlin RB](#), [Smith CB](#), [Schmitt MT](#), [Rappold AG](#), [Hinderliter A](#), [Graff D](#), [Carraway MS](#). Controlled exposure of humans with metabolic syndrome to concentrated ultrafine ambient particulate matter causes cardiovascular effects. [Toxicol Sci](#). 2014 Jul;140(1):61-72.

Publically available from:

<http://toxsci.oxfordjournals.org/content/140/1/61.long>

## Lamarck

**(1) Experiment name and brief description;**

*Epigenetic Effects of Diesel Exhaust and Ozone Exposure*

A multicomponent study that examines whether exposure to either ozone or diesel exhaust will alter epigenetic and microRNA regulation of gene expression in airway and circulatory cells.

**(2) Subject no. (no personal ID requested):**

36 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Ozone, <sup>18</sup>Ozone, diesel exhaust

**(4) Dose or dose range during subject exposure;**

Clean Air

Ozone: 0.30 ppm (no deviation more than 0.01 detected)

<sup>18</sup>Ozone 0.21 ppm – 0.33 ppm

Diesel exhaust 262.06 ug/m<sup>3</sup> – 315.33 ug/m<sup>3</sup>

Each exposure for 2 hours.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results that have undergone QA and peer-reviewed have been reported in:

Hatch GE, Duncan KE, Diaz-Sanchez D, Schmitt MT, Ghio AJ, Carraway MS, McKee J, Dailey LA, Berntsen J, Devlin RB. Progress in Assessing Air Pollutant Risks from In Vitro Exposures: Matching Ozone Dose and Effect in Human Airway Cells. *Toxicol Sci.* 2014 Jun 13. pii: kfu115.

Publically available from:

<http://toxsci.oxfordjournals.org/content/early/2014/07/03/toxsci.kfu115.long>

## DEPOZ

**(1) Experiment name and brief description;**

*Cardiopulmonary Responses to Exposure to Ozone and Diesel Exhaust with Moderate Exercise in Healthy Adults*

A randomized crossover study to examine multipollutant effects by comparing cardiopulmonary endpoints after sequential or combined exposure to ozone and diesel exhaust to that of individual pollutants.

**(2) Subject no. (no personal ID requested):**

21 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Ozone, diesel exhaust or both

**(4) Dose or dose range during subject exposure;**

Clean Air

Ozone: 0.30 ppm (no deviation more than 0.01 detected)

Diesel exhaust 294.51 ug/m<sup>3</sup> – 326.76 ug/m<sup>3</sup>

All exposures for 2 hours.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results that have undergone QA and peer-reviewed have been reported in:

[Lu SS](#), [Sobus JR](#), [Sallsten G](#), [Albin M](#), [Pleil JD](#), [Gudmundsson A](#), [Madden MC](#), [Strandberg B](#), [Wierzbicka A](#), [Rappaport SM](#). Are urinary PAHs biomarkers of controlled exposure to diesel exhaust? [Biomarkers](#). 2014 Jun;19(4):332-9.

Available from:

<http://informahealthcare.com/doi/abs/10.3109/1354750X.2014.910553>

[Madden MC](#), Stevens T, Case M, Schmitt M, [Diaz-Sanchez D](#), Bassett M, Montilla T, Bernstein J, [Devlin RB](#). Diesel Exhaust Modulates Ozone-induced Lung Function Decrements in Healthy Human Volunteers. *Particle and Fibre Toxicology* 2014 in press.

Publically available shortly from:

<http://www.particleandfibretoxicology.com/>



## CHAPS

**(1) Experiment name and brief description;**

*Respiratory Effects of Short-Term Low-Level Chlorine Gas Exposure*

A randomized cross-over design study to determine the effect on lung function of low-level exposure to chlorine

**(2) Subject no. (no personal ID requested):**

17 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Chlorine

**(4) Dose or dose range during subject exposure;**

Clean Air

Chlorine: 0.3 – 0.5 ppm for 2 hours.

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results are currently being analyzed and have not yet undergone QA and peer-review or been reported.

## TROPICOZ

**(1) Experiment name and brief description;**

*Interaction Effects of Temperature and Ozone*

A randomized cross-over design study to determine the cardiopulmonary effects of ozone at an elevated temperature

**(2) Subject no. (no personal ID requested):**

16 participants.

Please note that this is the total number of participants during the entirety of the study which may have commenced before 2010. Not all participants may have completed all parts of the study.

**(3) Type of pollutant exposure (e.g., ozone, PM2.5, chlorine, ultrafine PM etc.);**

Ozone

**(4) Dose or dose range during subject exposure;**

Clean Air

Ozone: 0.30 ppm (no deviation more than 0.01 detected)

**(5) Description of any clinical effects reported for subject; and (6) Description of any subclinical effects reported for subject.**

Results are currently being analyzed and have not yet undergone QA and peer-review or been reported.